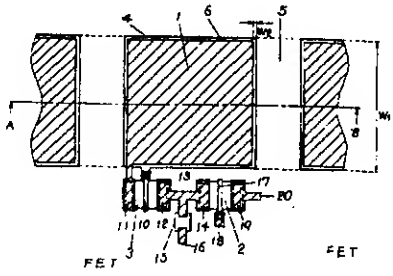
(54) FINGERPRINT SENSOR
(11) 5-61966 (A) (43) 12.3.1993 (19) JP
(21) Appl. No. 3-219540 (22) 30.8.1991
(71) MATSUSHITA ELECTRIC IND CO LTD (72) MASANORI SUMIHARA(3)
(51) Int. Cl⁵. G06F15/64,G06F3/03

PURPOSE: To detect pressure distribution in accordance with a fingerprint pattern by a piezoelectric thin film sensor with high accuracy by arranging a sensor element to which polarization processing is applied in matrix shape via upper and lover plane electrodes.

CONSTITUTION: A sensor element 1 is formed in such a manner that a piezoelectric thin film 5 with at least width size W of a lower plane electrode 4 is formed on the lower plane electrode 4. The element is comprised by forming an upper plane electrode 6 retracted by size W2 of 1/2 the piezoelectric thin film 5 from the boundary side of the lower plane electrode 4 on the piezoelectric thin film, and applying the polarization processing via the lower plane electrode 4 and the upper plane electrode 6. The piezoelectric sensor element 1 consisting of the piezoelectric thin film 5 is brought into contact with the chevron part (ridge) of a fingerprint, and the pressure of each piezoelectric element at a part coming in contact with the chevron part is converted to an electrical output signal by a piezoelectric effect. Only a piezoelectric element at a part to which the polarization processing is applied via the lower plane electrode 4 and the upper plane electrode 6 is provided with the piezoelectric effect, and no influence on a neighboring element is applied, thereby. the pressure distribution in accordance with the fingerprint pattern of a finger can be accurately detected.

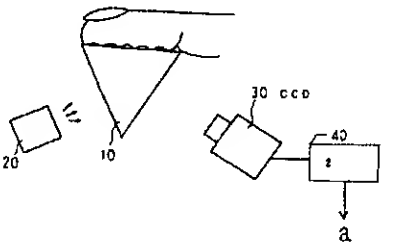


2: FET for switching, 3: FET for impedance conversion
15: drain resistor

(54) FINGERPRINT IMAGE INPUT DEVICE
(11) 5-61967 (A) (43) 12.3.1993 (19) JP
(21) Appl. No. 3-246836 (22) 30.8.1991
(71) NIPPONDENSO CO LTD (72) HIDENORI ANDO(2)
(51) Int. Cl⁵. G06F15/64,G06F15/62,G06F15/68

PURPOSE: To provide a device capable of always inputting a stable fingerprint image to a fingerprint collator without receiving ambient environmental change.

CONSTITUTION: A finger place on the plane of a triangle pole prism 10 is irradiated with a light source 20 using a LED from the leftward direction. Projected light is reflected by utilizing the optical boundary condition (critical angle) of a prism plane on which the finger is placed, and is inputted as a fingerprint image by a CCD camera 30 arranged in the rightward direction. The fingerprint image, etc., from the CCD camera 30 is inputted to a binarization part 40. A threshold value for the fingerprint image is changed appropriately in accordance with the ambient environmental change and the delicate change of the light quantity of the light source, etc. By employing such constitution, a binarized fingerprint image can be always changed to the fingerprint image with high quality by an appropriate threshold value, and is transmitted to the registration and collation part of the fingerprint collator. Therefore, reliability for following collation of the fingerprint, etc., can be remarkably improved.



a: to fingerprint collator

(54) DISPLAY DEVICE
(11) 5-61968 (A) (43) 12.3.1993 (19) JP
(21) Appl. No. 3-244325 (22) 30.8.1991
(71) CANON INC (72) MASAHIKO YAMAGUCHI
(51) Int. Cl⁵. G06F15/66,G06F3/147,G06F15/68,G06F15/72,G09G5/06,G09G5/36

PURPOSE: To realize image display processing with few incongruity.

CONSTITUTION: This device is provided with such feature that image data inputted from an image data input means A is displayed on a display means G via a display data storage means C, and at this time, when a desired area is designated by a range designation means B, a measuring means D measures the frequency in use of an image code for the image data on the display data storage means C in accordance-with the area whose range is designated, and a pallet setting means E automatically generates a pallet on which the prescribed number of image codes are set based on a measured result. In such a case, when the pallet is selected by a selection means F, a control means H controls image display on the display means G corresponding to the image of a selected pallet.